

CLAIMS

1. A device for stimulating specific areas of a brain within a head, said device comprising:

5 an induction device;

at least one passive marker connected to the induction device, said at least one passive marker being detectable by a tracking system.

2. The device as set forth in claim 1, wherein the induction device is a coil
10 in the form of an eight.

3. A system for stimulating specific areas of the brain using an induction device having at least one tracking system detectable marker attached to the induction device, said system comprising:

15 at least one marker connected to the head;

a position detection device which detects the position of the at least one marker connected to the induction device and the at least one marker connected to the head; and

a simulation device which determines the area of stimulation in the brain to be
20 stimulated by the induction device, wherein a model of the induction device and/or of the head is used for simulating.

4. The system as set forth in claim 3, said system comprising:

a display device which displays areas on the brain to be stimulated by the
25 induction device.

5. The system as set forth in claim 3, said system comprising:

a device for automatically positioning the induction device.

6. The system as set forth in claim 5, wherein the device for automatically
30 positioning the induction device is a rotating robot arm.

7. The system as set forth in claim 3, wherein the at least one marker connected to the head is a passive marker.

5 8. The system as set forth in claim 3, said system further comprising:
a device which generates a simulation model of the induction device.

9. The system as set forth in claim 8, said system further comprising:
a device which generates a simulation model of the head.

10 10. The system as set forth in claim 9, wherein the device which generates a simulation model of the head uses a finite, multi-shelled model.

15 11. The system as set forth in claim 10, wherein the device which generates a simulation model of the head uses a model including a plurality of nested spherical or ellipsoidal shells having adjustable thicknesses.

12. The system as set forth in claim 11, wherein the device that generates a simulation model of the head assigns different dielectric constants to each of the plurality of nested spherical or ellipsoidal shells.

20 13. The system as set forth in claim 3, said system further comprising:
a device that provides electrical impulses to the induction device.